



# 2002 Accomplishment: Operationally Validated Precision Runway Monitor (PRM) Benefits

- ✓ Precision Runway Monitor (PRM) in Minneapolis
  - ❑ Provided an increase in arrival rates of six percent or better
  - ❑ Which equates to four more flights per hour, while in operation



# The First Production Unit of the Integrated Terminal Weather System (ITWS) Is In Use at Atlanta





# Runway Visual Range Data Is Now Provided to Users via Collaborative Decision Making Network (CDMNet) and Available to More Than 49 Airports



## AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER

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### Products

- General Overview of the ATCSCC
- Special Event Reservations (e-STMP)
- Advisories Database
- Airport Arrival Demand Chart
- Operational Information System
- Collaborative Forecast Product
- Coded Departure Routes (CDRs)
- Central Altitude Reservation Function
- Airline FSM Training Sign-up







# Precision Approaches Instrument Landing System (ILS) Has Been Implemented at 14 Airports





# Agenda



Noon	Welcome and Introductions V5.0 Snapshot	Amr ElSawy
1220	Accomplishments, Experience and Performance • Recognize PODs	Gisele Mohler Andy Anderegg Bob Swensson
1335	Break	
1350	Metrics Report	Cynthia Morris
1405	OEP Challenges • Integrated Schedules • Equipage	Charlie Keegan • Mamie Mallory • Ardy Williams
1455	Break	
1510	Looking Ahead to v6.0 Process, Timing, Milestones	Bob Lamond
1520	Questions and Answers Wrap-up	Charlie Keegan Other Associates Col. S. Atkins



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# Operational Evolution Plan

## Industry Day Briefing 12/09/02

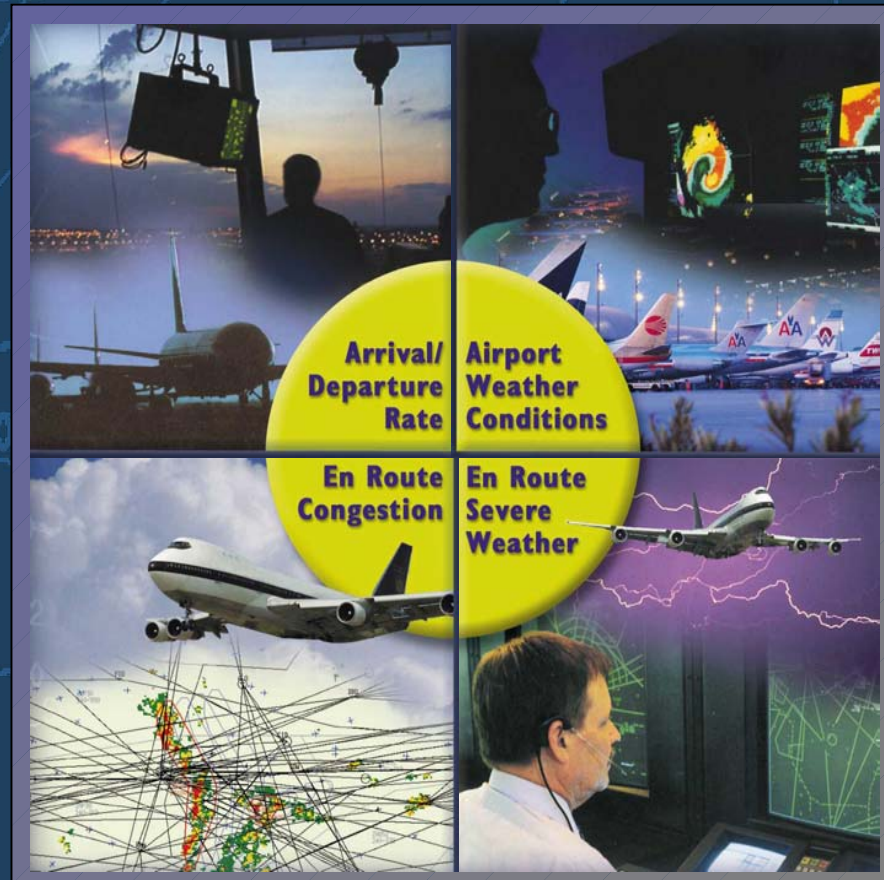
### OEP Challenges

**Charlie Keegan**

FAA Associate  
Administrator  
Research &  
Acquisitions and  
Director  
Operational  
Evolution Staff

**Claire Robinson**

Acting Deputy  
Director Operational  
Evolution Staff







**Global Navigation  
Satellite System  
(GNSS)**



**Communications  
Satellite**

# New Entries in Version 5

Required  
Navigation Performance

En Route Application  
(e.g. parallel routes)

Approach Applications  
(e.g. parallel approach  
transition)

**NAVAIDs**

**En Route  
Systems**

**ATCSCC  
Systems**

**SATCOM  
Ground  
Stations**

**Air/Ground  
Communications**

**AOC  
Systems**

**Radar**

**Airport  
Traffic  
Control  
Tower  
(ATCT)  
Systems**

**Airport Landing,  
Weather, Lighting**





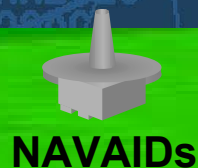
**Global Navigation  
Satellite System  
(GNSS)**



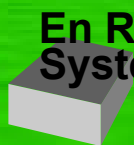
**Communications  
Satellite**

# New Entries in Version 5

Closely Spaced Runways  
(e.g. along track separation;  
wake procedures)



**NAVAIDs**



**En Route  
System**



**SATCOM  
Ground  
Stations**

**Air/Ground  
Communications**



**AOC  
Systems**



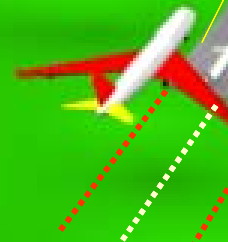
**Systems**



**Radar**



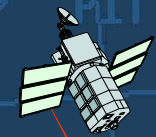
**Airport  
Traffic  
Control  
Tower  
(ATCT)  
Systems**



**Airport Landing,  
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# New Entries in Version 5



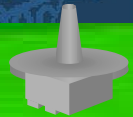
**Global Navigation  
Satellite System  
(GNSS)**

**Communications  
Satellite**



**Better definition of  
Collaborative Decision Making**

**NAVAIDs**



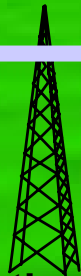
**SATCOM  
Ground  
Stations**



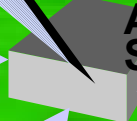
**En Route  
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**Air/Ground  
Communications**



**ATCSCC  
Systems**



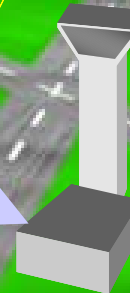
**AOC  
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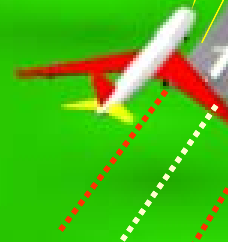
**Radar**



**Airport  
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**Airport Landing,  
Weather, Lighting**







# Major Upgrades Require User Participation

2002 2003 2004 2005 2006 2007 2008 2009 2010

CPDLC B1 Miami

CPDLC "B1"  
(more sites)

GPS LPV  
(near CATI)

LAAS  
(6 sites)

CPDLC  
National

RNP 2/RNP .3  
(En Route/Arrival)

RNP .11

DRVSM

PRM

ADS-A

ADS-B/CDTI

- FAA and Users Equip
- Users Equip, FAA
- Procedures/Certification
- FAA Equip, Users Train







# Tools to Address the Increasing Challenge

- ✓ Integrated schedules
- ✓ A look at equipage



# Operational Evolution Plan

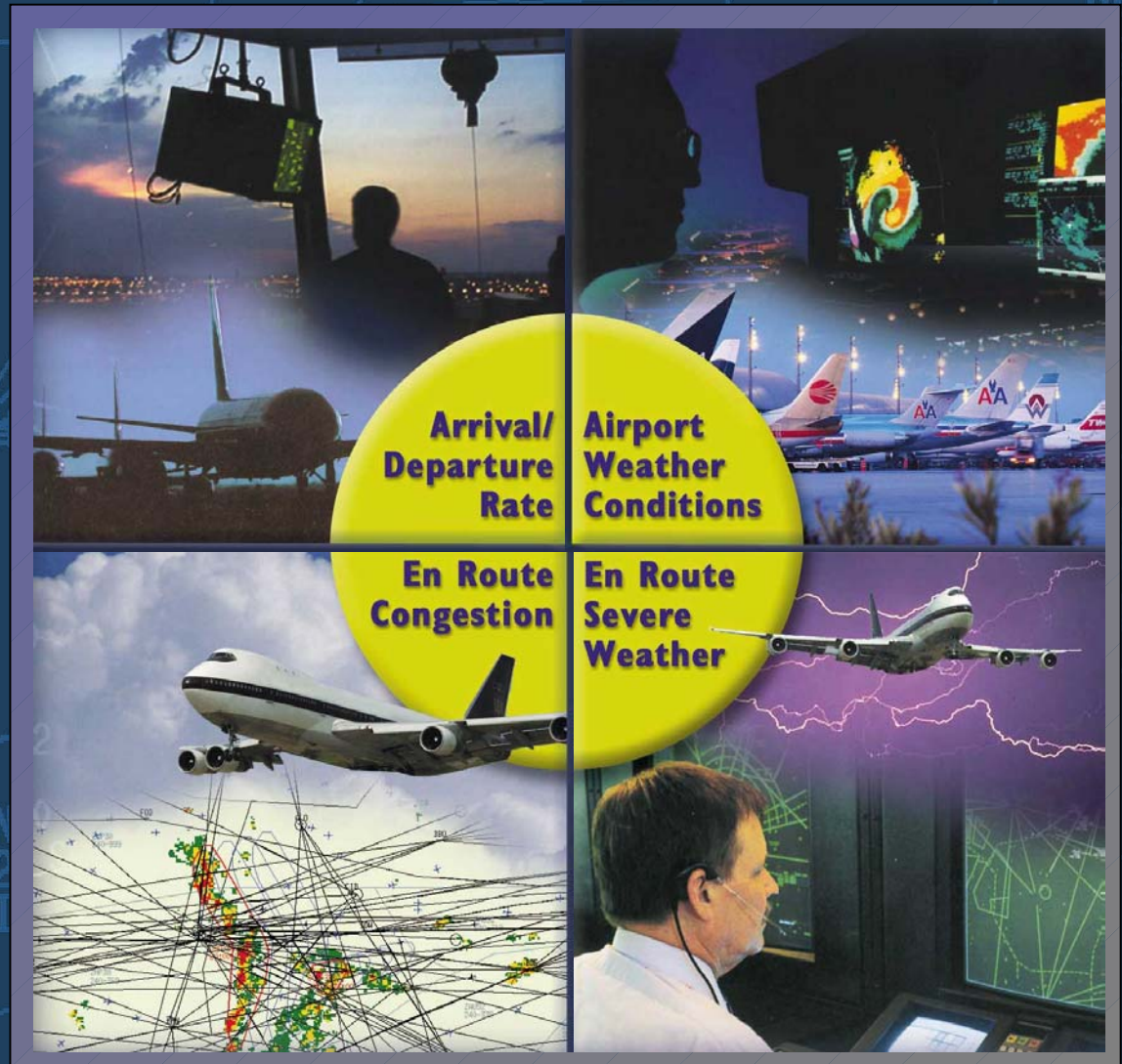
## Industry Day Briefing 12/09/02

### Challenges –

OEP Commitment Assurance:  
Implementation / Resource Integration

Mamie Mallory

Operational Evolution Staff







# Objectives

- ✓ Comprehensive view of OEP projects and program activities
- ✓ Critical input from stakeholders
  - Coordination and integration
  - Alignment of resources
  - Realistic OEP milestones





# OEP Implementation/Resource Integration Matrix

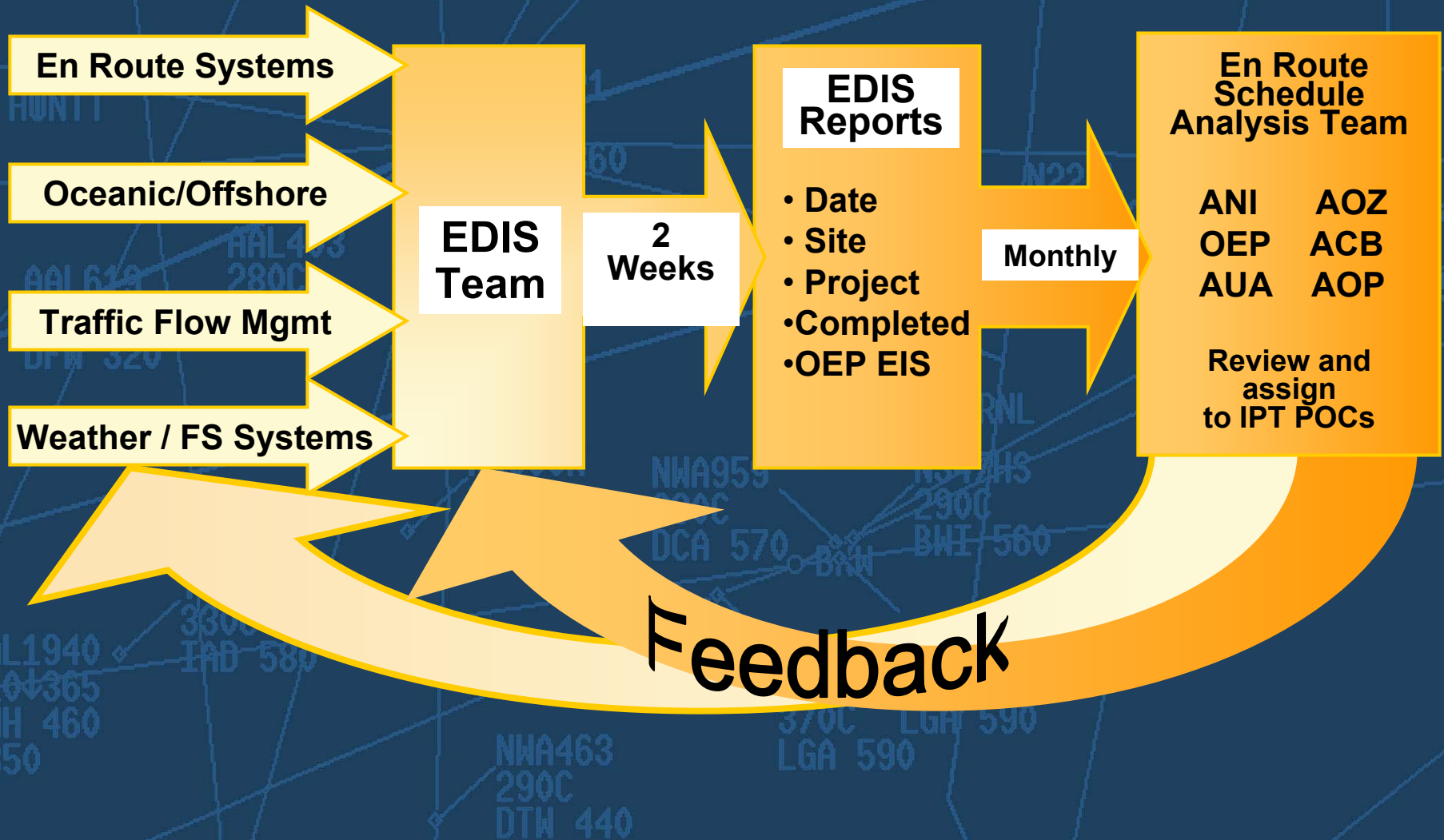


OEP QUAD	SOLUTION/TITLE	POD/SECONDARY CONTACT	PHONE/ LOCATION	SUPPORT OFFICES	ACE	AEA	AGL	ANE	ANM	ASO	ASW	AWP	AAL
30 nm Lateral and Longitudinal Separation in the South Pacific (30/30 Implementation)												ZOA '05	
30/30 Expansion; also AAL						ZNY						ZOA	Region-wide
ER-7	Accommodate User Preferred Routing		John Thornton, AOZ-1 Rose Schmokel		202-220-3300		ATP-1 AUA-200 Interagency IPT						
Conflict Identification and Planning:													
User Request Evaluation Tool (URET)					ZNY '04	ZMP '03	ZBW '04	ZDV '03 ZLC '03 ZSE '04	ZJX '03 ZMA '04 ZTL	ZFW '03 ZAB '03 ZHU '04	ZOA '04 ZLA '04		
Conflict Resolution and Planning Aids:													
Enroute Conflict Resolution/Problem Analysis Resolution and Ranking (PAAR), trial 6, '02													
AW-1	Maintain Runway Use in Reduced Visibility		Mike Cirillo, ATP-1 Jacqueline Parker		202-267-9155		AND-700 AFS-400 ASC-200 AND-500 AVN-1 AIR-100 ATB-20 ATS-1 AND 400 IPT for Surveillance						
Near Term:													
Visual Meteorological Conditions (VMC) to Instrument Meteorological Conditions (IMC) Approaches:													
New RNAV Approaches					Cast list of IMC Approaches								
Wide Area Augmentation System (WAAS)					SEA '02								
Local Area Augmentation System (LAAS) Category I (CAT I)					ORD '05-'06			SEA	MEM	IAH '05-'06	PHX		
Long Term:													
Parallel Runway Monitor (PRM)					JFK	CLE '04				ATL '06			
National Simultaneous Offset Instrument Approaches (SIOIA) Release				STL '02								SFO '02	
Lateral Navigation (LNAV)/Vertical Navigation (VNAV) '04-'10						About 300/Year Nationally							
AW-2	Space Closer to Visual Standards		Mike Cirillo, ATP-1 Jacqueline Parker		202-267-9155		AND-500 SF-21 SSG AOZ-1 ATB-1 AIR-100						
Enhanced Visual Approach								SDF					
Cockpit Display of Traffic Information (CDTI)								SDF (Initial testing)					
			John Staples, ARU-1										





# En Route Domain Integrated Schedule (EDIS) Process







# ATB Initiatives to Airport Matrix

## Terminal Business Service

### Regional Input:

### Financial

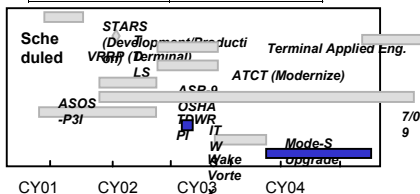
### Performance

Operations Rank	6/473	Delay Rank	14 / 749
Capacity (Arr/Hr) (46.6/Hr)*	69.4	Flight Delays	11,065
Peak Capacity Utilization	76.7%	Equip Related	127
Arpt Eff Rate (95.49%)*	96.51%	Equip Types	ARTS-89, TCOM-22, Atmtn-16

### Initiative

- 1. Positively impact capacity at top 32 airports
- a. Optimize Landing/Departure Rates

Completed	Planned
FDIO	STARS (Tech Refresh)
ARTS-3A	ASDE (SLEP)
STARS (Facility Upgrade)	ASR-9 SLEP
AMASS	PRM
ASOS/ASWON	NEXRAD Upgrade
	TDWR SLEP
	EFSTS



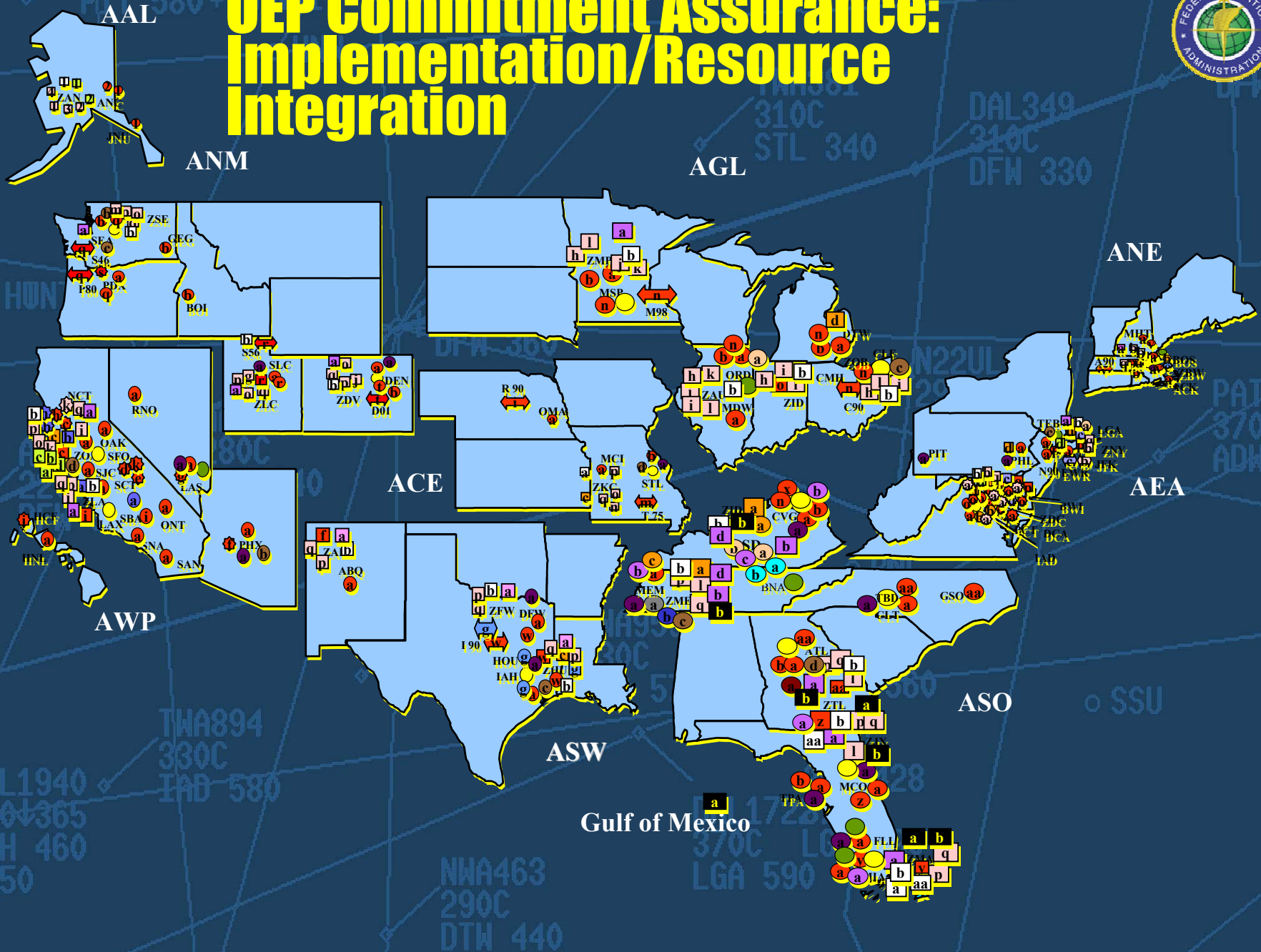
### Systems

Fielded Systems	Planned Systems	Scheduled Systems
FDIO	STARS (Tech Refresh)	TDLS
ARTS-3A	ASDE (SLEP)	Terminal Applied Engineering
STARS (Facility Upgrade)	ASR-9 SLEP	ATCT (Mod)
AMASS	PRM	STARS
ASOS/ASWON	NEXRAD Upgrade	ASOS P3I
	TDWR SLEP	Wake Vortex
	EFSTS	ITWS
		TDWR P3I
		Mode-S Upgrade
		ASR-9 OSHA

### OEP Initiatives:

- AD-3: Redesign Terminal Airspace and Routes
- Area Navigation (RNAV) Route Development Through '04
- Coordinate Domestic (DRVSM) Re-design Program - '04
- Traffic Management Advisory-Multiple Center (TMA-MC) - '03
- New RNAV Procedures
- Lateral Navigation (LNAV)/Vertical Navigation (VNAV) '07-'10
- Collaborative Decision Making - Collaborative Convective Forecast Product (CCFP) Development, Upgrade '02
- RVR via CDMNet

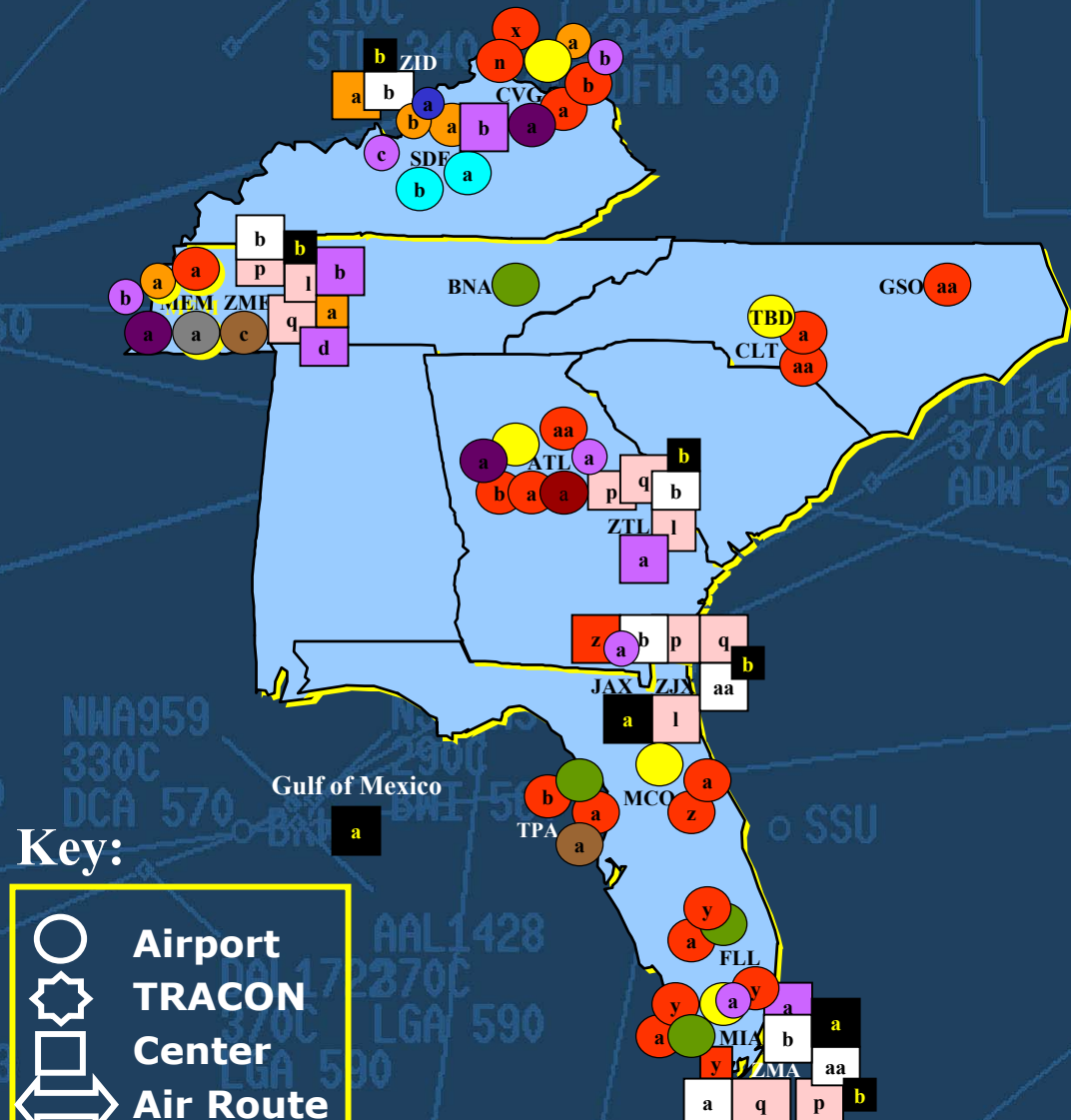






QUAD	SOLUTION SET	SITE
AD-1	Build New Runways, '03 – '08	●
AD-2	Use Crossing Runway Procedures, '04 – '05	●
AD-3	Redesign Terminal Airspace and Routes <u>Routes Independent From Navigation Aids:</u> a. RNAV Route Development through '04 b. RNAV Route Development '05 through '10 <u>Redesign Terminal Airspace:</u> n. AGL Midwest Expansion, '07 x. CVG Runway, '03 y. MIA 4 <sup>th</sup> Runway, '03 z. MCO 4 <sup>th</sup> Runway, '03/'04 aa. ATL, CLT, GSO Runways, '05	● ■
AD-4	Fill Gaps in Arrival and Departure Streams <u>Metering and Merge Planning:</u> a. TMA-SC, '02 – '07 b. TMA-MC	● ■
AD-6	Coordinate for Efficient Surface Movement a. Surface Management System, '03 (trial)	●
ER-1	Match Airspace Design to Demands <u>Redesign En Route Airspace:</u> l. ZTL North/South Flows, '03 p. High Altitude Phase 1 Expansion, '04 q. High Altitude Phase 2, '06	■
ER-2	Collaborate to Manage Congestion	All Regions '03 – '13
ER-3	Reduce Voice Communication a. CPDLC, Build 1, '02    aa. CPDLC, Build 1A, '07 – '10 b. CPDLC, National Deployment	■
ER-4	Reduce Vertical Separation a. RVSM, '05 b. DRVSM, '05	■
ER-7	Accommodate User Preferred Routing a. URET, '03 – '05    b. TMA-SC, '06 c. TMA-MC, '03    d. URET CCLD, '02 – '04	● ■
AW-1	Maintain Runway Use in Reduced Visibility a. New RNAV Procedures, '03 c. LAAS, CAT I, '05 – '06	●
AW-2	Space Closer to Visual Standards a. Enhanced Visual Approach (CEFR) '04 – '06 b. CDTI, 03 (evaluation)	●
AW-3	Reconfigure Airports Efficiency a. ITWS/CIWS, '02 – '04	●
AW-4	Enhanced All-Weather Surface Operations a. SF-21, '05	●
AW-5	Maintain Optimum Runway Use at Airport with CSPR a. PRM, '05	●
EW-1	Provide Better Hazardous Weather Data	All Regions '03

# OEP Commitment Assurance: Implementation/Resource Integration - ASO



Source: OEP V 5.0 (Draft), 12/02